

'Biggest Bang for the Buck' in Public Works

By Lee Burnett

Innovation is alive and well in the highway garages, transfer stations and municipal boiler rooms of Maine.

Doing more with less is a necessity in an era of tight budgets and sound-bite politics, but Maine's road commissioners and public works directors seem to take special pride in finding a better way to do something. An informal survey of these ingenious Yankees produced a variety of ideas for saving money and finding efficiencies. The ideas range from the big (adopting a pavement management strategy) to the not so big (rethinking the kind of blades used on snowplow truck). In between were ways to reduce trucking costs and boost recycling (single stream recycling), greater inter-town cooperation (joint equipment purchases), and burning non-traditional fuels (biodeisel and used motor oil).

Here then are some ideas for getting a better bang for the public works dollar.

Single Stream Recycling

Sebago and Brunswick are among the dozens of towns saving money by switching to "single stream" recycling. The savings come primarily from reduced trucking costs and enhanced recycling rates.

Traditional recycling programs involve the sorting by hand of bottles, cans, newspapers and cardboard. Many homeowners can't be bothered to do it themselves and to boost recycling rates, some towns have adopted curbside recycling programs, where the sorting is done by collection crews as they pick up materials and deposit them into a compartmentalized truck. It's still la-

bor intensive.

In "single stream" recycling, the recyclables are thrown together, compacted and trucked to a regional processing center, where the sorting is done mechanically. The compaction reduces trucking costs because, while the truckloads are heavier, there are far fewer of them.

Sebago switched to "single stream" recycling at its transfer station a few months ago, and has seen immediate savings, said Town Manager Robert Nicholson. "It's very clear to us it's had a significant impact already and we haven't seen the true benefit yet," he said. First year savings could approach \$84,000 though the switch to single stream recycling is not the only factor in the savings, he said.

Recycling in Sebago is still largely a voluntary practice, though that is changing. The switch to "single stream," involved getting rid of a compartmentalized recycling container at the transfer station and purchasing an open-bin system with a compactor. The set-up at the transfer station remains the same. Residents stop once, throw household trash in one bin and recyclables in another. And now many more materials are accepted for recycling.

The town also mandates the recycling of cardboard, which had not been recycled at all before the switch. Currently, it's the only mandate in the system, which relies heavily on education.

The education campaign consists of repetitive advertising using identical messaging on the side of the bin, as well as on refrigerator magnets, posters and flyers posted in public places. A letter will be going out with tax bills and a poster contest is planned with the winning entry to appear on the

back of the town report.

Sebago is seeing multiple savings. Compacting the recyclables has meant fewer recycling truck runs – a truck load every four days instead of every two days. Mandating cardboard recycling has reduced tonnage and hence the cost of trash disposal. Coincidentally, the town renegotiated its tipping fee with Pine Tree from \$95 per ton to \$70 per ton. Lastly, the town realized trash haulers were eager for business and contracted out its trucking, at another big savings.

"We think we can reduce the mill rate by one quarter. That to us is huge," Nicholson said.

Not having to sort on the spot saves residents time at the transfer station, which should reduce the waiting line on busy summer days, said Nicholson.

Sebago has ambitious goals of increasing its current recycling rate of 27 percent to at least 45 percent. Next year, Sebago plans to mandate recycling for commercial businesses and the following year, mandate recycling for all households. "Here's the dream – 6 percent recycling," said Nicholson. "Towns like Saco are close to that."

Brunswick's switch to single stream last year had less to do with reduced trucking costs than with extending the life of its landfill. For the past dozen years, Brunswick has operated a processing facility where it consolidated and baled recycled materials collected at curbside by town public works crews. Recycling was voluntary. The processing center employed a single full-time person at a cost of at least \$45,000 and the town earned about \$100,000 on the sale of five kinds of recycled materials.

Last year, the town switched to single stream and sent all its recyclables to the Pine Tree Recycling

Lee Burnett is a freelance writer from Sanford.

facility in neighboring West Bath. It shut down the processing facility which had been in need of a modernization investment anyway and transferred the employee to a vacant position in the public works department.

Even though the town earns no revenue by sending its recyclables to Pine Tree, the switch will save money in the long term by extending the life of its landfill from 15 years to 21 years, according to Craig Worth, deputy public works director. That's because the switch to single stream coincided with introduction of mandatory "pay per bag" recycling, whereby residents are individually charged for the amount of trash they throw away, which gives them a financial incentive to recycle. "That drastically decreased the amount of trash," said Worth. At the same time, "We're seeing a tremendous increase in recyclables." Extending the life of the landfill by six years will put off the \$6-8 million closure cost, while the town earns revenue from the sale of trash bags, he said.

Single stream recycling can save towns money whether they employ a curbside collection program like Brunswick or a drop-off transfer station system like Sebago, says Beth Young, the recycling coordinator for FCR Recycling, the recycling division of Casella Waste Systems. Of the 42 towns that contract with Pine Tree Waste - Casella's trash hauling subsidiary - 20 or nearly half have switched to single stream recycling, she said. "Towns that should consider doing it immediately are those that are transporting loose or doing curbside," she said.

The biggest savings come in trucking costs. Sorted recyclables are typically transported loose, while single-stream recyclables are transported compacted. "You can use a standard garbage truck," said Young. "By compacting you go from a three-ton load to an eight-ton load and you save on your per-ton transportation costs," she said.

The towns that would have the toughest decision about switching to single stream are those that have made investments in baling and other processing equipment to get materials ready for market. That equipment would no longer be needed, she said.

Single stream is also more comprehensive, allowing the collection of 20 or more different materials, instead of the half dozen or so that are usually re-

cycled, she said. That "avoided cost" is the reduction in the tonnage of trash that must be paid to be incinerated or landfilled. Young says Casella gives towns the option of being paid nothing for their recycled materials, but in return being guaranteed an outlet for their recyclables even when markets are poor, or a percentage of revenue - variable with market conditions - and no guarantee of an outlet when demand is down. Most towns take the guaranteed outlet, she said.

Pavement Management

Money can disappear in a hurry when it's spent on roads, especially when there's no systematic way of ensuring it's doing the most good. Since the early 1990s, Maine DOT has been pushing towns to adopt pavement management programs as an alternative to making road spending decisions according to parochial politics or subjective opinions. The heart of the program is a road conditions survey that makes it possible to make cost/benefit comparisons of various road projects. "In today's world, with asphalt prices going up and up and roads falling apart faster, you've got to have something," said Peter Coughlan, director of the Local Roads Center at the Maine Department of Transportation.

Without a pavement management program, road maintenance money inevitably gets spent on the roads in the worst condition, which is a wastefully expensive approach, said Coughlan. "With that approach, you're always going to be falling behind," he said. It's far more effective to spend limited road maintenance money on "keeping your good roads good" and occasionally bonding a major reconstruction project to bring a substandard road "back up the curve."

Pavement management programs

don't have to be expensive. "They can be very technical. If you want to pay someone, go ahead," he said. However, a basic road conditions survey can be done by lay people with some training, said Coughlan.

The information must be entered into a database (the Maine DOT provides free software) and updated every year. "Plenty of towns do it for nothing, they use volunteers," he said. DOT also provides free data base software.

Pavement management programs are common but not universal, says Coughlan. "We continue to get calls every week, wanting this information," he said.

Collaboration

The small towns of Readfield, Wayne and Manchester in central Kennebec County, have adopted the pavement management program and are going further, moving in a direction extolled by many but practiced by none - true collaboration on road maintenance. Joint purchasing of fuel oil, road salt, and other bulk commodities is now common. But sharing road responsibilities is still resisted in Maine because roads are considered the bedrock of local control. Even the towns of Chapman, Castle Hill and Mapleton in Aroostook County, long the models of inter-town collaboration, retain separate control of their roads.

Readfield, Wayne and Manchester are moving toward extensive cooperation. A \$100,000 grant from the regional cooperation program of the Maine Municipal Bond Bank enabled the three towns to develop a joint pavement management program, jointly purchase a John Deere tractor with mowing attachments, and collaborate on some other things.

The tractor enables the communities to take in-house the mowing of

Providing Maine's Municipalities with:

- Road and Intersection Design
- Site Planning and Development
- Traffic Impact Studies/Reviews
- Bridge Design
- Planning Board Peer Review
- Road Assessments/Inventory
- Right-of-Way Services
- Aviation Services
- Transportation/Land Use Planning

Serving Maine since 1945

HNTB Corporation
The HNTB Companies
Engineers Architects Planners

2 Thomas Drive
Westbrook, ME 04092
Tel: (207) 774-5155
Fax: (207) 772-7410
www.hntb.com

HNTB

roadside grass, which has traditionally been contracted out. Last summer, the three towns spent \$3,500 instead of the estimated \$12,000 it would have cost to contract out the work. "Even factoring in the cost [of the tractor], which I think is fair, we still come out ahead," said Stefan Pakulski, Readfield's town manager.

Local contractors are not happy about the developments, but Pakulski said the town owes it to taxpayers to save money where possible. The next step would be purchase of a truck that could be used for snowplowing in the winter and road maintenance in the summer, he said. The pavement management program gives the towns the possibility of consolidating road maintenance and paving projects where feasible, said Pakulski.

Heating Fuel Options

For more than 15 years, the town of Rumford has saved money on heating the municipal garage by burning used motor oil along with home heating oil. "We save at least a couple thousand [dollars] a year," said Public Works Director Andy Russell. The decision was

not difficult because the cost of a waste fuel burner was only slightly more than a traditional oil burner and there is a local dealer in town, Russell said. The town used to have more waste oil to burn when it serviced the school buses, but still burns many hundreds of gallons of waste oil a year.

The Town of Fairfield is trying out biodiesel in one of its one-ton trucks and if all goes well, the town could be saving big bucks by fueling all its trucks and heating town building with used cooking oil. The opportunity arose when Bio Renewables Fuels moved from China to the town's business park and borrowed \$59,000 from the town's revolving loan fund, according to Town Manager Paul Blanchette.

Biodiesel – a purified form of grease from the Fryolators at fast-food restaurants – is interchangeable with petroleum-based diesel. Used as a fuel it tends to stir up the sediment at the bottom of fuel tanks, which prompted Fairfield to install an extra \$40 fuel filter on its test truck.

Before switching over the entire fleet, Fairfield will compare engine performance and power. "The next

truck we convert will be bigger, but we want to see if [the one-ton] loses power [before converting other trucks]," said Blanchette.

The only other conversion cost is installing a bulk storage tank for less than \$1,000, according to Blanchette. But saving 10-15 percent on price of fuel when you buy 25,000 gallons a year could amount to annual savings of \$7,000 to \$9,000 per year, Blanchette said.

The next step would be to use biofuel to replace heating oil in the town town buildings, both as a "green" way of heating and at a savings to the town of an estimated \$1.25 per gallon once conversions are done.

"In some aspects, you want to use it because you are not burning petroleum products," he said. "And we all know there is a petroleum/energy problem. If you can burn something else or use something else, you can help in not burning foreign oil."

"I think it burns cleaner and we can cut our heating bill for the town. If we can do that, and it's successful, we can save the town some money," Blanchette said.



Research & Analysis to Support Action

Helping communities with:

- ✓ economic development
- ✓ technology & innovation based economic development
- ✓ tax increment financing
- ✓ program & service planning & evaluation
- ✓ fiscal, economic, & demographic analysis

Jim Damicis, Principal

17 years experience providing research & analysis

- 5 years as Maine Municipal Association's Resource Center Director
- 3 years as Research & Policy Director for the Maine Science & Technology Foundation
- 9 years as consultant serving public & private sector clients

www.policyoneresearch.com info@policyoneresearch.com 207-831-1061

Snowplow Blades and Video Cameras

Augusta officials are rethinking use of carbide blades on their plow trucks since the public works department switched to a "salt priority" strategy for snow removal. For the past 10 years, city plow trucks have been equipped with carbide-edge blades, which cost six times more than regular steel blades, also last much longer. The cost/benefit equation is changing because the salt priority strategy means there is more slush and water – and less snow – on the roads. That translates into greater abrasion and shorter blade life especially when plowing crowned, uneven or rough roads, said Scott Kenoyer, fleet service manager.

"On a good flat road, no doubt carbide is the answer and before we had salt priority and more snow on the road, carbide worked pretty well," Kenoyer said. "With salt priority, the blade's right on asphalt. I haven't been getting the [duration of] wear."

This winter Kenoyer switched to steel blades on all 24 trucks and graders. The \$108 blades wear faster than \$650 carbide, but unlike carbide blades they can be flipped to extend the life of unevenly worn blades, said Kenoyer. He thinks the switch was worth it, although this atypically snowy winter has busted his \$22,000 plow blade budget. "I know if I'd stayed with carbide, I would have gone through my budget a long time ago," he said.

Fairfield has switched to swiveling video cameras in some of its snowplow trucks, which cost a total of about \$6,000 in equipment, but saves on having to send out an extra man to provide for vision to the rear when backing up, according to Town Manager Blanchette. The change was worked out through union contract negotiations and could provide savings in the first year, he said.


Bath is trying to stock up this year on next year's salt. Salt that is now selling at \$51 per ton could hit \$65 per ton next year. If the city could buy ahead . . . "we could save \$20,000," said Public Works Director Peter Owen. "We're working on it. It's kind of a risk because we don't know what the prices will be, but in discussions with the salt supplier, there will be a significant increase," he said.

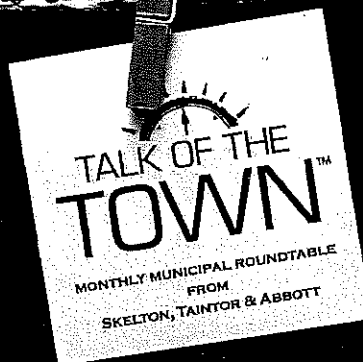
Bath is also extending the life of a

dump truck by converting it to a flatbed and using it up at the landfill. The conversion costs \$3,000 to \$4,000, but could extend its life another six years and save the \$30,000 to \$50,000 of a new truck, he said.

Pownal, Freeport's inland neighbor, has upgraded its small fleet of equipment, which is enabling it to do more work in-house and increasing productivity, says Road Commissioner Shawn Bennett. As two older, six-wheel trucks were due to be retired, Bennett has replaced them with 10-wheel trucks, which cost \$12,000 to

\$14,000 more than the smaller trucks, but they haul more, which reduces overall mileage and gasoline costs. He's also purchased an excavator under a 10-year \$114,000 lease-purchase agreement. The new equipment has enabled Bennett's crew to do more work in-house, primarily maintenance of ditches and culverts to improve drainage and extend the life of roads.

"We've quadrupled our productivity," said Bennett. "In 2007, we saved \$12,000, which was a bit of a turnaround. We have a huge project this year and we'll double that." 



WE'RE AIRING ALL OUR INSIDE INFORMATION.

Tune in to Maine's first and only online legal roundtable devoted to municipal issues and challenges. New programs air every fourth Monday at 7:30 a.m., and previous shows are always available as podcasts – only at www.stalegal.com.

**SKELTON
TAINTOR
& ABBOTT**
ATTORNEYS AT LAW

207.784.3200

95 Main Street | P.O. Box 3200 | Auburn, Maine 04212-3200 | 1.800.639.7026
www.stalegal.com